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 TI Sulfate-free fast rigid hydraulic binder compositions for shotcrete
 IN Mitkova, Darina
 PA Dyckerhoff A.-G., Germany
 SO Ger. Offen., 4 pp.
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 CC 58-3 (Cement, Concrete, and Related Building Materials)
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	AT 210104	E	20011215	AT 1999-117565	19990906
	ES 2167980	T3	20020516	ES 1999-117565	19990906
	PT 1004555	T	20020531	PT 1999-117565	19990906
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CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 19854477	ICM	C04B028-02
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AB The fast rigid compns. consist of sulfate-free mineral binder (typically, fine **portland cement** clinker, metallurgical sand, micro-silica, metakaolinite, zeolite, Ca-silicate, Ca-aluminate, and/or lime,) and 0.25-2 wt.% of sulfonate-free **superplasticizer** esp. polycarboxylate having mol. wt. 5000-50000 g/mol. Optionally, the binders comprise setting accelerators such as alkali hydroxides, alkali-earth hydroxides, alkali carbonates or bicarbonates, alkali silicates, Ca(NO3)2, Ca(HCOO)2, alkali sulfates and/or pyrosulfates, and/or amines.

ST fast rigid sulfate free hydraulic binder shotcrete

IT Binders

(S-free; sulfur-free fast rigid hydraulic binders for shotcrete)

- Portland cement
 - sand
 - microsilica
 - metakaolinite clay
 - superplasticizer

can be thicker

1, 2, 4, 5, 9-11